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UNUSUAL BOGGS ROCK

by Harvey Krouse

Prompted by a copy of an intriguing scientific study of the flora of Boggs Rock by botanists from Clemson University, Verna and I visited the location in September 1976.

As a result of this floristic study, conducted principally by John M. Knox for his Masters thesis, several plants were found that at that time were not in the published literature. These plants are included in the catalogue or checklist he prepared of the flora of the area, which will be referred to later.

Boggs Rock, so named by a former owner, is located just 1000 yards west of Route 178 between Pickens and Liberty, South Carolina--approximately $\frac{1}{2}$ miles north of Liberty. It consists of an expansive outcrop of granitic gneiss, the surface of which slopes gradually from a shallow ravine to almost the horizontal. There are several sections of rock exposure interrupted by smaller areas of shallow soil deposits on which are growing low shrubs and trees and other vegetation. It is difficult to determine the total area of exposed rock, but an estimate might be 15 acres.

The rock surface, of course, is irregular permitting many shallow basins where rain water and growing media collect. It is in these areas that some of the unexpected plants grow in profusion, principally many species of lichens, mosses, liverworts, and one species of sedum.

As I mentioned, we first explored Boggs Rock in September after a prolonged dry spell. All the colonies of mosses and lichens were completely dehydrated so that footsteps through them sounded like walking on excelsior.

Other than finding the rare and unrecorded Aster arifolius and the cactus, Opuntia gonpressa, in flower, it was an unrewarding botanical visit--so much so that I cancelled a scheduled field trip there later that fall.

However, the extensive checklist of unusual flora was sufficiently convincing that under normal weather conditions, Higgs Rock would be a decidedly interesting place to explore.

And indeed it is! which we discovered during a scheduled field trip there April 9, 1979, when sixteen Club members spent over two hours discovering and identifying some plants on this unusual rock habitat. Our visit was after a very wet spell.

Perhaps the most prominent plants were the great masses of lichens and mosses. Not being at all acquainted botanically with these Thallophytes and Embryophytes (non-flowering plants), I hesitate to mention their names with, perhaps, the exception of pink earth, beard, reindeer lichen, and the cushion moss.

But for those informed--what a field day it would be! Believe it or not, the check sheet lists 24 species of lichens and 13 species of mosses.

The most colorful exhibits were compact patches of Sedum Scellii growing in the shallow water-filled basins at various places on the rock surface. The leaves of this tiny plant were brick red and their insignificant white flowers were about ready to open. Separate groups wandering about the rock surface poking into surrounding vegetation uncovered some other interesting plants.

Virginia juniper, the dominant evergreen, grows poorly presenting a half-alive appearance, and is encrusted with lichens. It probably suffers from being in shallow soil during the dry seasons.

The cactus, Spuntia compressa, was just beginning to produce new leaf segments from last year's leaves. The arrowleaf violet, Viola sagittata, was in fine flower, which species, incidentally, is not included in the otherwise reliable checklist. There was a species of golden ragwort not observed in our area; Senecio torquatosus was just beginning to flower, not conspicuous, but decidedly different in leaf appearance.

A minute, most inconspicuous plant attracted one of our members who was determined to identify it before we departed--and she did! It was a member of the pink family considered quite rare. There was a controversy over which of two species it was. The common name is sandwort, the scientific name is Arenaria uniflora or A. greenlandica--depending on (and I quote from the "Manual") "...in need of biosystematic study...." So, you carry on from there Peggy Gammixind!

TRANSPLANT PINK LADYSLIPPERS?

First and foremost, we all should know better than to remove any of our native orchids from their natural habitats. But those who may have innocently dug them from the woods or have bought them from market vendors may wonder why they didn't survive, especially the Pink Ladyslipper.

There is a definite reason! It is due to the living interdependence, of symbiosis, between a host fungus and the orchid. Found in the decaying organic matter of the forest floor are parasitic fungi, the threads or mycelium of which either attach to or enter the cellular structure of the roots of the ladyslipper. As a result of this infection by the fungus, the root shows characteristic structural modifications. These structures are called mycorrhizae (mykes-fungus; rhiza-root).

What are the mutual advantages? The fungus obtains food substance such as sugars and starches produced only by the plant. The plant obtains basic elements such as nitrogen and phosphorous which are released from the decomposition of the forest humus accelerated by the action of the fungus. Many orchids are unable to assimilate these elements unless pre-processed by the related fungus.

But why not emulate nature by moving a large chunk of forest soil with the lady slipper? It could help, but not for long. The removed humus will soon (in 2 years) be depleted of the necessary organic material for the fungus to decompose, the orchid will be element deficient--unable to produce carbohydrate foods for itself, and and both will die.

Reference: Symbiosis edited by S. Mark Henry,
Volume 1, 1966, Academic Press, New York

CONCERN ABOUT DOGWOODS

Most of us were aware that some of the dogwood trees during the flowering season this year exhibited a rusty appearance and reduced size of the "flowers."

Perhaps you suspected frost action or delayed flowering--no, it was the result of a disease known as anthracnose.

For more information I applied to the Department of Plant Pathology at Clemson University. They sent a copy of a short publication of the North Carolina Extension service from which I am quoting:

"During recent years the health and beauty of our State flower--the flowering dogwood--has been damaged by spot anthracnose (on-thrack-nos). Damage, especially in ornamental plantings, has been reported in many areas. Until recently no satisfactory control measures were known.

"Spot anthracnose is a disease caused by a parasitic fungus (*Elasino corni*). Flower bracts and foliage are seriously disfigured making the trees unsightly. Sometimes flower buds may be so badly diseased that they never open. If the disease is not checked trees are finally so badly weakened that flowers and foliage become sparse. Continued shoot infection may result in dead twigs.

"The disease causes spots (lesions) on flower bracts, leaves, young shoots, and berries. A single flower bract may at first have a single spot or many spots. The disease spreads over the bracts after the flower opens. Many spots give ugly, misshapen blossoms.

"Young shoots have circular or elongated scabby spots (lesions) with reddish or purple margins. Diseased shoots infect next year's growth."

There is nothing we can do about the disease that infects our native trees, but we are able to control the disease on our domesticated dogwoods.

A thorough and timely spray program must be followed:

1st application	In March, when flower buds are first beginning to open and are in the "cup" stage.
2nd application	As soon as bracts have fallen.
3rd application	About 4 weeks after 2nd application.
4th application	In late summer after the flower buds for next season's bloom are well formed.

These spray materials are effective:

Captan 50W - 2 lbs/100 gallons water
Maneb - 1 1/2 lbs/100 gallons water
Benlate (per directions)

In the September issue of *SHOOTER*, among other articles, a resume of our spring and summer field trips will be published. Comments given to me by the trip leaders will be most appreciated.

Harvey Krouse